

REMARKS

This amendment is responsive to the Office Action dated January 16, 2009. Claims 1-28 remain pending in the application. In view of the remarks below, reconsideration and allowance of the pending claims are respectfully requested.

Applicant expresses appreciation to the Examiner for the indicating that claims 2-20, and 22-28 contain allowable subject matter.

Claims 1 and 21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,267, 082 to Ono et al. ("Ono"). This rejection is respectfully traversed.

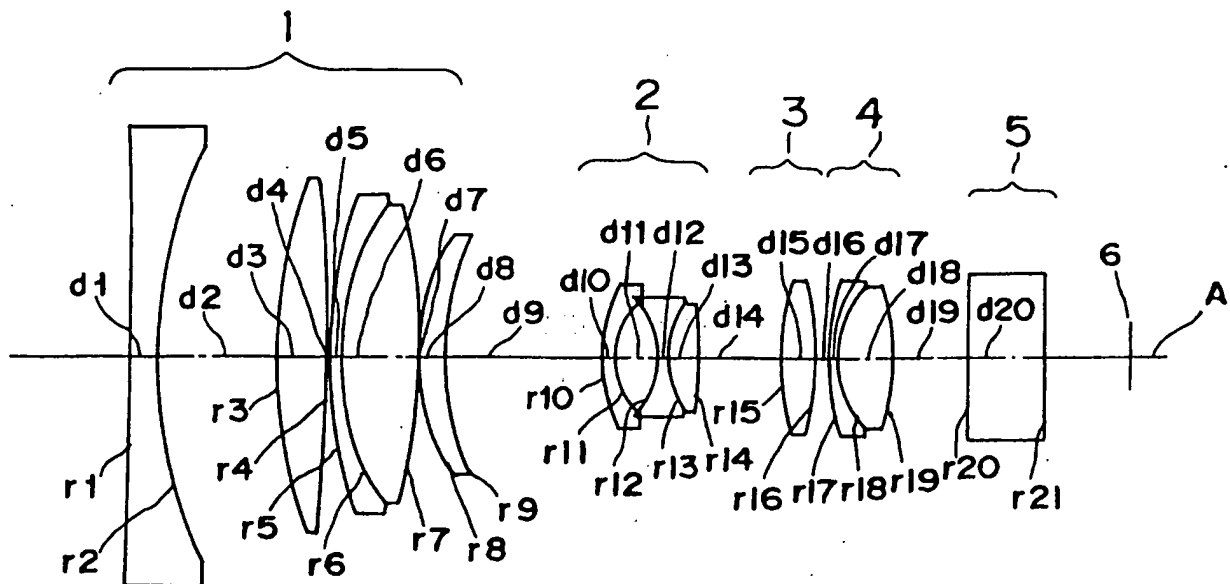
Claim 1 recites: *[a] zoom lens of an inner focus type having four or five lens groups, including at least a first lens group having positive refractive power, a second lens group having negative refractive power, which is movable in an optical axis direction mainly for zooming (varying power), a third lens group having positive refractive power, and a fourth lens group having positive or negative refractive power, which is movable in the optical axis direction for correcting fluctuations in focal position during zooming and for focusing, which lens groups are arrayed in order from an object side, characterized in that:*

said first lens group comprises at least a concave lens, a convex lens, and a triple-cemented lens in which a lens made of special low-dispersion glass is sandwiched in the middle, which lenses are arrayed in order from the object side.

These claimed features are neither disclosed nor suggested by Ono. Ono discloses, as shown in Ono Fig. 1 (reproduced below), a wide angle aspherical zoom lens including "a first lens group [1] having a positive refracting power, a second lens group 2 having a negative refracting power, a third lens group 3 constituted by an aspherical lens having a positive refracting power, a fourth lens group 4 having a positive refracting power and a flat glass plate 5 optically equivalent to a quartz crystal filter and a face plate of an imaging device." Ono, col. 4, ll. 50-59.

Ono also discloses that the first lens group 1 is fixed, the second lens group 2 is moveable along an optical axis A, the third lens group 3 is fixed, and the fourth lens group 4 is moveable. Ono, col. 4, ll. 61-68.

Fig. 1



The Office Action alleges that Ono teaches that “said first lens group comprises at least a concave lens, a convex lens, and a triple-cemented lens in which a lens is sandwiched in the middle, which lenses are arrayed in order from the object side.” Office Action, p. 3, ll. 2-5. However such is not the case.

Ono discloses, as shown in Ono Fig. 1 (reproduced above), a first lens group characterized in that, “[w]hen viewed sequentially from the object side toward the image surface side, the first lens group 1 includes a first concave lens, a first convexo-convex lens, a cemented lens composed of a second concave lens and a second double convex lens and a meniscus convex lens[.]” Ono, col. 5, ll. 2-10.

Ono TABLE 1 (reproduced below), however, makes clear that Ono’s “cemented lens” is not a “triple-cemented lens” as recited in claim 1, but is composed of *only* the “second concave lens” and the “second double convex lens.” Ono explains that “in Table 1... *d* denotes the thickness of each of the lenses of the zoom lens or air space between the lenses.” Ono, col. 6, ll. 35-38. In Ono Fig. 1 and Ono Table 1, there is no distance between the “second concave lens” and the “second

double convex lens,” as these lenses are cemented. However, there is a distance d_7 separating the “second double convex lens” and the “meniscus convex lens.” Table 1 teaches that this distance of “air space between the lenses” is 0.15. Further, Ono Table 7 (not reproduced) teaches that this distance of “air space between the lenses” is 0.20. Accordingly, it cannot be maintained that Ono’s “cemented lens” is “triple-cemented lens” as recited in claim 1.

TABLE 1

f = 5.200-40.062 F/No. = 1.47-2.29					
Lens group	i of i-th surface	r	d	n	ν
1	1	-438.717	2.00	1.60311	60.7
	2	40.135	9.80		
	3	49.581	4.30	1.51633	64.1
	4	-139.707	0.20		
	5	41.629	0.90	1.80518	25.4
	6	21.035	5.85	1.58913	61.2
	7	-92.085	0.15		
	8	16.090	2.55	1.60311	60.7
	9	28.707	Variable		
2	10	17.510	0.70	1.69680	55.6
	11	5.792	3.47		
	12	-7.798	0.70	1.67003	47.2
	13	7.798	2.65	1.80518	25.5
	14	-340.780	Variable		
3	15	14.582	2.92	1.60602	57.4
	16	-41.160	Variable		
4	17	29.411	0.70	1.84666	23.9
	18	9.200	4.37	1.66547	55.2
	19	-17.766	Variable		
5	20	∞	6.30	1.51633	64.1
	21	∞	—		

Purely by way of example, Applicant’s Fig. 1, reproduced below, aids in explaining this distinction. Applicant’s claim 1 recites that the “*first lens group (Gr1) comprises at least a concave lens (L1), a convex lens (L2), and a triple-cemented lens (L3, L4, and L5) in which a lens (L4) made of special low-dispersion glass is sandwiched in the middle, which lenses are arrayed in order from the object side.*”

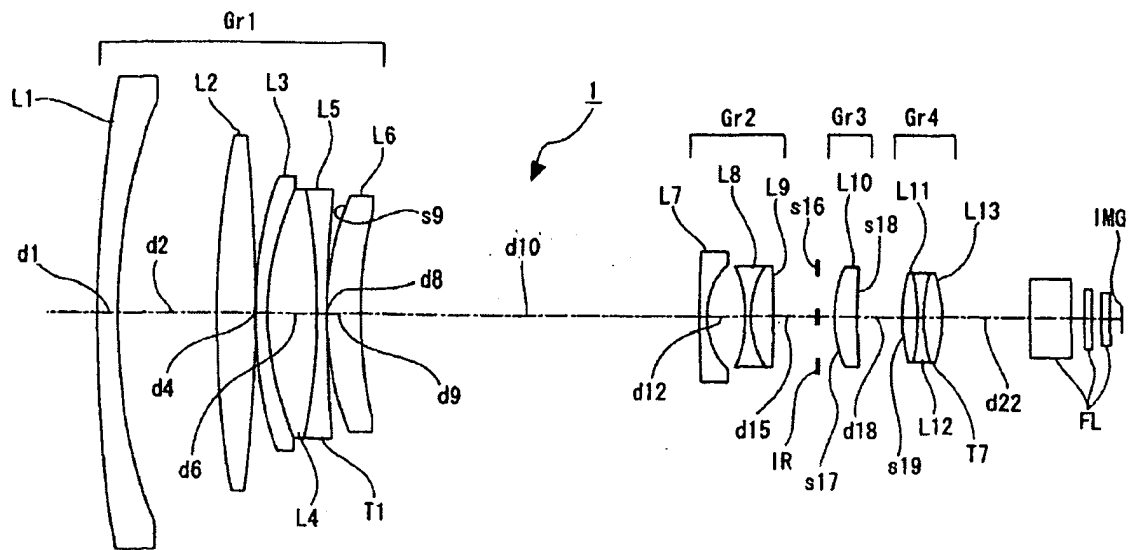


Fig. 1

The triple-cemented lens recited in claim 1 is significant and should not be overlooked. "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

In the Specification, the Applicant noted the problem encountered by the prior art:

Since this special low-dispersion glass has a soft quality and low latent flaw resistance as is well known, latent flaws are easily caused during ultrasonic cleaning in lens manufacturing. Furthermore, since a thermal expansion coefficient of the special low-dispersion glass is large, when it is heated inside a vacuum chamber in a vapor deposition process for lens coating, and immediately after the vapor deposition, air is caused to flow into the vacuum chamber to quench, cracks easily occur. Therefore, the glass needs to be left inside the vacuum chamber for long hours after the vapor deposition to cool slowly, so that a vapor deposition cycle takes long, which causes a problem with productivity and further disadvantageously affects costs. Spec., p. 2, ll. 15-25.

The Specification discloses that this problem is addressed by "*said first lens group compris[ing] at least a concave lens, a convex lens, and a triple-cemented lens in which a lens made of special low-dispersion glass is sandwiched in the middle*":

since the lens made of special low-dispersion glass is located in the middle of the triple-cemented lens, latent flaws are not caused during ultrasonic cleaning even if lens coating is not applied, dents and latent flaws caused at the time of lens polishing and during ultrasonic cleaning can be filled with an adhesive agent located between the cemented lens, and the cementing makes the coating unnecessary, so that a zoom lens excellent in mass productivity can be attained at a low cost. Spec., p. 5, ll. 12-19.

Because Ono fails to disclose or suggest a “*first lens group comprises at least a concave lens, a convex lens, and a triple-cemented lens in which a lens made of special low-dispersion glass is sandwiched in the middle, which lenses are arrayed in order from the object side,*” as recited in claim 1, Applicant requests reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Ono. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.); *see also* MPEP 2143.03.

For reasons similar to those given above, Ono also fails to disclose or suggest all the features of independent claim 21. Accordingly, Applicant requests reconsideration and withdrawal of the rejection of claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Ono.

CONCLUSION

In view of the foregoing arguments, all claims are believed to be in condition for allowance. If any further issues remain, the Examiner is invited to telephone the undersigned to resolve them.

This response is believed to be a complete response to the Office Action. However, Applicant reserve the right to set forth further arguments supporting the patentability of their claims, including the separate patentability of the dependent claims not explicitly addressed herein, in future papers. Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicant expressly do not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 C.F.R. § 1.104(d)(2) and MPEP § 2144.03.

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Respectfully submitted,

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